LOCATION HYDRAULIC STUDY
August /September 2011

I. LOCATION

07-VEN-118 KP 17.2/18.10
07-VEN-34KP 28.2/28.4

II NAME OF STREAM

Coyote Canyon Creek and Fox Barranca Creek.

III GEOGRAPHICAL REFERENCE

The proposed project (Alt - II to IV and VI) are located on State Route 118, between Route 34 and Donlon Road. Alternative-V will start from Hwy 34 and goes parallel to Rail Road and meets the 118 Hwy.

IV DESCRIPTION OF PROPOSALS

The proposed project consists of the following improvements:

Alternative 1, or the "No-Build Alternative" proposes to maintain the existing configuration of the intersections.

Alternative 2, or the "Intersection Improvement Alternative" proposes to construct a four-way intersection with SR 118 and SR 34. In this alternative it is proposed to extend existing Lt. Turn lane up to 800' and add one additional 800' long Lt. Turn lane on WB SR 118. Planning to add one Rt. turn lane and one Lt. Turn lane on Eastbound SR 118 West of Route 34 intersection. Also adding one Auxillarry lane on SB SR 34 and one 800' lane on eastbound Route 118 east of the Route 34 intersection. Propose to add 459' of storage

length to existing northbound Route 34, shared thru/left-turn lane. Shoulder width will be changed to standard 8 feet shoulder. For all this widening it is also proposed to aquire new right of way on both Hwys.The new intersection will be constructed of Jointed Plain Concrete Pavement(JPCP) structural section. Reconstruction of existing pavement was included along with the new roadway widening portion of the project in order to bring it up to the current standard.

Alternative 3, or the "Save Our Somis (SOS) Alternative.

The Somis Community has proposed this alternative.This alternative is similar to Alt-2 except that it proposes a single longer Lt. Turn lane from WB SR 118 to SB SR 34. Where as Alt-2 proposed two short Lt. Turn lane. This alternative proposed to extend the existing Lt. Turn pocket from westbound Route 118 to southbound Route 34 by 1004' to a total length of 1164'. Propose to add one 440 feet right turn lane and a 440' Lt. Turn lane to the eastbound Route 118, west of the Route 34 intersection. By extending the existing northbound Route 34 , Lt. Turn lane by 449 feet to a total storage length of 619 feet. It is also proposed to aquire new right of way on both Hwys.

A**lternative 4**, or the "Roundabout Alternative" proposes to replace the existing SR118/SR34 intersection with a roundabout. The new traveled way width will be made up to two 12' lanes and standard 8' left and right shoulder. The existing SR 118/ Donlon Road " T " intersection will be relocated west of existing location forming the north leg of new intersection. It is also proposed to aquire new right of way on both Hwys.The new intersection will be constructed of Jointed Plain Concrete Pavement(JPCP) structural section. Under this alternative the realignment of Donlon Road avoids crossing Coyote Creek at the immediate vicinity of the intersection,but

instead crosses over an existing spillway further upstream. A new bridge will be constructed over Coyote Creek at the spillway location.

Alternative 5, or the "Somis Bypass Alternative" proposed by the Save Our Somis(SOS)Group. In this alternative a new 2 lane NE/SW diagonal highway will link SR34 to SR118 east of Somis Community. The existing SR 118/SR34 intersection will remain same except the existing SR118/Donlon RD "T" intersection realignment to be constructed by Ventura County prior to this project, needs to be modified to meet Caltrans standards. Two Left turn lanes will be added at W/B SR-118 to the SB Somis Bypass at the new intersection of the Route 118/bypass. Standard 8' shoulder will be provided most of the project locations. Add one 525' taper,with beginning point 75' from curb return of east leg of Route 118/Bypass intersection.Add Right Turn to the west leg of 118/Bypass intersection for vehicles making a right turn to the southbound Somis Bypass. The Somis Bypass at the route 118 intersection will carry one Lt. Turn lane and one right lane in the Northbound direction, one through lane and 655' lane in the southbound direction. Also plan to add one 1000' right lane to the south leg of the existing northbound Route 34 at the new Somis Bypass intersection and one Lt. Turn lane to the north leg of the existing southbound Route 34 at the somis bypass intersection. The east leg of the Somis Bypass at the Route 34 intersection will carry one through/Right turn lane,one Lt. Turn Lane in the westbound direction,one through lane and transition in the eastbound direction. The new intersection will be constructed of Jointed Plain Concrete Pavement(JPCP) structural section. Reconstruction of existing pavement was included along with the new roadway construction in order to bring it up to the current standard. It is also proposed to aquired new right of way.

Alternative 6, or the "Bridge Alternative" It is similar widening changes as Alt-2 with respect to the Route 118 and Route 34 portions of the intersection. The only difference between two alternatives was the realignment of Donlon Road.The original intent of this alternative was to provide a different realignment of Donlon Road from Alternative 2 while keeping widening changes to Route 118 and Route 34 similar.However with the elimination of Donlon Road realignment from this project,the resulting layouts for Alternative 2 and 6 are now identical. Alternative 6 would duplicate Alternative 2 with respect to the widening improvments on Route 118 and Route 34.

V AVERAGE DAILY TRAFFIC

The 2009 AADT for Route 118/34 West leg is 11,000 and 118/34 East leg is 17,500 . The 2009 AADT for Route 34/118 South leg is 12,100 .

VI HYDRAULIC DATA

Alternative # II to IV and VI.

Along Coyote Creek approximately 650' north of Los Angeles Avenue (State Route 118) there is Coyote Creek Basin. This facility was built and is maintained by, Ventura County Flood Control District (VCFCD). It intercepts and controls the flows from the confluence of

Coyote and Sulpher Creeks. Information furnished by VCFCD estimates the 100 years runoff to this facility to be 4300cfs from a 5000- acre drainage area. There were no records of overtopping of the basin based on discussions with VCFCD, and Caltrans Field Maintenance (During Caltran's study in 2000). Flows are conveyed under Highway 118 by approximately 10.65 feet wide and 10.79 feet high RCP arch culvert (supported by reinforced conc.), according to Caltrans's old study in 2000. The maximum hydraulic capacity of culvert before overtopping roadway is estimated to be 3000cfs according to study conducted in 2000. Overtopping of the highway should not occur because the maximum outflow of debris basin is regulated by spillway to 1860cfs. But as per new study done by Hawks and Associates for Ventura county due to sedimentation and silt, the conveyance reduced to 10 feet wide by 5 feet high (corrugated metal pipe arch(CMPA)) culvert only. That is why; hydraulic capacity of culvert is reduce to nearly 50%. In order to make this culvert effective ,it requires cleaning and lining inside for smooth surface with low manning's (N) value. If culvert is improved it will function efficiently. This study is based on available data.

Alternative V:

In this alternative, proposed alignment will affect Fox Barranca Creek, Coyote creek and new channel. All these creeks meet at one place and confluence with Calleguas creek through box culvert which is located under railroad. According to FEMA maps, these creeks fall in, floodplain "Zone A". "Zone –A" area means FEMA did not determine, 100 year flood plain area and base flood elevation. These are 'Approximate A Zones" on the DFIRMs. By using the appropriate FEMA methodology (using FEMA Publication 265) you can get

approximate estimate for 100 year base elevation. Tried to get information from Ventura County, but no detail information regarding any past study or base flood elevation or flood affected area are available. According to FEMA publication -265 guideline (FEMA approximate method) base flood elevation is calculated. (Totally on assumption and approximation basis). Base flood elevation, calculated on approximate method and it is 281'.Over proposed alignment, one bridge is proposed, the bridge soffit should be above 281' elevation with necessary free board according to Fema. Because of this proposed alignment there may be longitudinal encroachment on Fox Barranca Creek. Also transverse encroachment on Coyote creek may take place. Because of these situations, base flood level may rise by some amount and will damage crops, plants and overtop rail road etc. There may be plans to divert part of water of Fox Barranca Creek by constructing longitudinal box culvert(or parallel conc. Channel) parallel to proposed alignment from Fox Barranca, which will require detailed analysis to find out, whether it will be effective solution or not. This will be a longitudinal encroachment, which will not be preferable until valid alternative design should come up. No detail design data was available from Rail Authority for their box culvert. But due to proposed construction of roadway alignment in the upstream of Rail Road Box culvert; it will require redesigning Rail Road Box culvert and accordingly one more box culvert across Rail Road will be proposed. But this requires special study. There is one existing ditch, starts from 118 Hwy culvert, will be covered by proposed road construction in alternative V. This existing ditch will be covered under proposed road construction, therefore alternative ditch required flowing water from 118Hwy culvert. Therefore relocation of this ditch will be required also.

VII FLOODPLAIN MAP

1. Flood Insurance Rate Map; Ventura County California Community Panel No. 813 of 1275, DFIRM#06111C0813E, Jan.20, 2010.

For Alternative II, III and IV

VIII Q100 BACKWATER DAMAGES

1. Residence? No
2. Other building? No
3. Crops No

IX TYPE OF TRAFFIC

1. Emergency supply or Evacuation route? Yes
2. Emergency vehicle access? Yes
3. Practical detour available? No
4. School bus of mail route? Yes

X Estimated duration of traffic interruption for 100-year event is ---------**0 Hours**

Estimated value of Q100 flood damages to the proposed project is minimal.

A. Roadway $0

B. Property $0

Based on this Location Hydraulic Study, it is determined that this project is a, "Low Risk Project".

For Alternative V

XI **Q100 BACKWATER DAMAGES**

1. Residence? No
2. Other building? No
3. Crops Yes

XII **TYPE OF TRAFFIC**

1. Emergency supply or Evacuation route? Yes
2. Emergency vehicle access? Yes
3. Practical detour available? No
4. School bus of mail route? Yes

XIII Estimated duration of traffic interruption for 100-year event is **…….0 Hours.**

Estimated value of Q100 flood damages to the proposed project.

A. Roadway $0.

B. Property /Crops/ /Rail road. $ probably more than $100,000.00

Based on this Location Hydraulic Study, it is determined that this project (Alternative V) is "Between Low to Medium Risk Project".

On the basis of preliminary study (Totally on assumptions basis, because no data or record available), following suggestion can be made.

1) Add one 12'x10' Box culvert close to old culvert at rail road to discharge more water from fox barranca to callegus creek.

XVI Estimated duration of traffic interruption for 100-year event is... **0 Hours.**

Estimated value of Q100 flood damages to the proposed project.

A. Roadway $0

B. Property $0

Based on this Location Hydraulic Study, it is determined that this project is a "Low Risk Project".

2) Propose 12'x6' Box culvert at Sta 22+00 on proposed new alignments to discharge part of water from fox barranca and than that water will flow through concrete channel and discharge in to Box culvert at rail road.

4) Remaining part of water will flow parallel to new alignment and pass under new proposed bridge and at end discharge into rail road culvert.

5) Proposed bridge soffit elevation should be designed with necessary free board above 100 year flood level.

6) One box culvert at intersection of 118 Hwy and new proposed Alt.5 Bypass merging.

7) Also one ditch parallel to Alt.5 Bypass from 118 Hwy should be relocated.

For Alternative VI

XIV **Q100 BACKWATER DAMAGES**

1. Residence? No
2. Other building? No
3. Crops No

XV **TYPE OF TRAFFIC**

1. Emergency supply or Evacuation route? Yes
2. Emergency vehicle access? Yes
3. Practical detour available? No
4. School bus of mail route? Yes

DISCLAIMER

Floodplain data are based on information available when the report was prepared. The accuracy of said information is not warranted by the State and interested or reflected parties should make their own investigation for all the different Alternatives.

PREPARED BY:

S.T.E-CS)

Signature-District Hydraulic Engineer

Date 9/ 30 /2011

Dave Bhalla

Signature- Project Engineer

Date 9/ 30 /2011

Darrel A Cruz

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

This map reflects **more detailed and up-to-date stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities Participating in National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Areas is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~~~ 513 ~~~ Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western hemisphere

1000-meter Universal Transverse Mercator grid values, zone 11

600000 FT 5000-foot grid ticks: California State Plane coordinate system, zone V (FIPS ZONE 0405), Lambert Conformal Conic projection

DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 River mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 20, 2010

EFFECTIVE DATES OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

500 0 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0813E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 813 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA, CITY OF	060413	0813	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06111C0813E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency
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